This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (original) A scanning probe microscopy system comprising:

at least two scanning probes, each probe supported by cantilever to an atomic force microscope (AFM);

control means in each AFM adapted to receive motion control signals;

means for generating a first motion control signal for a first one of the AFMs for motion in a first direction;

means for generating a second motion control signal for the first one of the AFMs for motion in a second direction;

means for determining a first offset motion control signal responsive to the first motion control signal for a second one of the AFMs for motion in spaced relation to the first one of the AFMs in the first direction;

means for determining a second offset motion control signal responsive to the second motion control signal for the second one of the AFMs for motion in spaced relation to the first one of the AFMs in the second direction; and,

means for generating image scan data from input signals from each probe.

2. (original) A scanning probe microscopy system as defined in claim 1 further comprising feedback means from each probe to the respective control means for adjustment of the associated motion control signals.

3. (original) A scanning probe microscopy system as defined in claim 1 wherein the means for determining a first offset motion control signal and the means for determining a second offset motion control signal comprises a rotational matrix.

4. (original) A scanning probe microscopy system as defined in claim 1 wherein each probe and the respective cantilever are oriented for placement of a tip of the probe distal the AFM.

5. (original) A scanning probe microscopy system as defined in claim 1 wherein a cantilever deflection signal is monitored and said cantilever deflection signal comprises the input signal from each probe to the scan image generation means.

6. (original) A scanning probe microscopy system as defined in claim 1 wherein a cantilever deflection signal is monitored and said cantilever deflection signal provides feedback to the AFM for constant force scanning.

7. (original) A method for scanning probe microscopy comprising the steps of:

attaching a first cantilever supported probe to a first AFM;

attaching a second cantilever supported probe to a second AFM;

determining a first directional pattern for the first probe;

determining a second direction pattern for the first probe;

calculating a first control signal corresponding to the first directional pattern;

calculating a second control signal corresponding to the second directional pattern;

determining a relative position of the second probe and AFM to the first probe and AFM;

calculating a first offset control signal based on the first control signal and the relative position of motion of the second probe in spaced relation to the first probe in the first directional pattern;

calculating a second offset control signal based on the second control signal and the relative position of motion of the second probe in spaced relation to the first probe in the second directional pattern; and,

simultaneously supplying the first and second control signals to the first AFM and the first and second offset controls to the second AFM; and,

generating image scan data from input from the probes.

8. (original) A method for scanning probe microscopy as defined in claim 7 further comprising the steps of:

providing feedback for position of the first probe;

modifying the first and second control signals responsive to the feedback;

providing second feedback for position of the second probe; and,

modifying the first and second offset control signals responsive to the second feedback.

9. (currently amended) A method for scanning probe microscopy as defined in claim ~~6~~ 7 wherein the step of attaching a first cantilever supported probe further comprises the initial step of attaching a first probe and cantilever at an angle for maximum spacing of the first probe tip from the first AFM and the step of attaching a second cantilever supported probe further comprises the initial step of attaching a second probe and cantilever at an angle for maximum spacing of the second probe tip from the second AFM.

10. (original) A method for scanning probe microscopy as defined in claim 7 further comprising the steps of:

monitoring a cantilever deflection signal for each probe; and,

providing the cantilever deflection signal for generation of the image data.

11. (original) A method for scanning probe microscopy as defined in claim 7 further comprising the steps of:

monitoring a cantilever deflection signal for each probe; and,

providing the cantilever deflection signal as feedback to the AFM for the probe for constant force scanning.

12. (new) A method for scanning probe microscopy as defined in claim 7 further comprising the steps of:

selecting a location for probing from the generated image scan data; and,

driving at least one probe tip to the selected location.

13. (new) A method for scanning probe microscopy as defined in claim 12 wherein the step of selecting a location includes the step of selecting a probe button.

14. (new) A method for scanning probe microscopy as defined in claim 12 wherein the step of driving comprises the steps of calculating and outputting a waveform to drive the AFM associated with the at least one probe tip.

15. (new) A method for scanning probe microscopy as defined in claim 14 wherein a second probe tip is driven based on the selected location and the step of driving further

comprises the step of sharing common clocks and synchronization pulse to drive the first AFM for the first probe tip and the second AFM for the second probe tip